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February 9, 2017

Ms. Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12th Street, S.W.  
Washington, D.C. 20554

**Re: *Ex parte* presentation in IB Docket No. 11-109; RM-11681;  
IBFS File Nos. SES-MOD-20151231-00981, SAT-MOD-20151231-00090, and  
SAT-MOD-20151231-00091**

Dear Ms. Dortch:

On February 7, 2017, Valerie Green, Executive Vice President and Chief Legal Officer of Ligado Networks, Harold Furchtgott-Roth of Furchtgott-Roth Economic Enterprises, and the undersigned met with Rachael Bender, Legal Advisor to Chairman Pai, to discuss Ligado's pending applications to modify its current license to allow Ligado to build an ancillary terrestrial network (the "Applications") and petition for rulemaking on the proposal to auction the 1675-1680 MHz band.

We first reviewed the evidence in the record on the license modifications. We highlighted that the Applications were filed December 2015 in fulfillment of Ligado's obligation to the major GPS device manufacturers (Deere, Garmin, and Trimble) to seek to codify Ligado's agreement to dramatically reduce its transmit power and OOB levels and not to use the 10 MHz of spectrum closest to GPS for terrestrial purposes, all of which was set forth in the separate co-existence agreements with each of those companies. We also pointed to the agreements with those companies that were filed in the record and which contain the reduced power levels. The parties then discussed the additional agreements that Ligado reached with two more GPS device companies, NovAtel and TopCon, and that both of these companies filed comments in the record supporting approval of the license modification applications. We next cited the extensive data in the record submitted by Roberson and Associates that verify the conclusion that the reduced power levels for LTE in the adjacent band ensures that GPS devices will not be impacted. We pointed out that no contrary data has been submitted.

In that context, we discussed the years-long efforts by the Department of Transportation to study bands adjacent to GPS, and the Department's most recent statement that it planned to craft emissions standards for transmission devices that are regulated by the Commission pursuant to the FCC's statutory authority. We discussed our view that this action by the Department is

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*ultra vires* and discussed the attached letter to DOT outlining the analysis behind that conclusion. Lastly, we explained that approval of the license modification applications would benefit the public interest by bringing this vital band of 35 MHz of spectrum to use. We reiterated that this mid-band, green-field spectrum can serve the Internet of Things, facilitate the transition to 5G, enhance our nation's infrastructure, and deliver connectivity to emerging and critical infrastructure industries.

The parties then turned to a brief discussion of the proposal to reallocate the 1675-1680 MHz band to shared commercial use. We reviewed the information submitted since the Commission issued a Public Notice in April 2016 to refresh the record on this petition for rulemaking, and noted that two affected interests have been identified: NOAA and so-called non-NOAA users. These users have no spectrum rights per se but listen in on the one category of NOAA data that is transmitted in this spectrum (alone among all the other categories of NOAA's data acquisition and distribution activity) that potentially would be affected by shared use of the band. With respect to NOAA's earth stations, we highlighted that Ligado has proposed broad protection zones around NOAA's earth stations and an engineering analysis of those protection zones is in the record.

As to the 100 or so non-NOAA users, distributing large amounts of data on a reliable basis to numerous spots around the country is done every day, every hour, by content delivery networks (CDN) using the cloud and high-speed fiber optic cables. These networks have many advantages over a system that relies on privately-owned \$150,000 satellite dishes that only can be used by a tiny number of users. In fact, last summer Ligado purchased a satellite dish and, as documented in our comments, constructed a CDN to deliver NOAA's weather data through the cloud. Ligado's CDN is now operational and is delivering NOAA data to George Mason University. Ligado recently demonstrated this system at the American Meteorological Society meeting in Seattle and the company is eager to add more users to its CDN of NOAA data.

Finally, we emphasized in the meeting that issuing a Notice of Proposed Rulemaking to identify the specific issues that need to be addressed in a reallocation of 1675-1680 MHz is the only way to trigger debate on important unresolved issues and advance the cause of making more spectrum available to maintain America's leadership in the mobile broadband economy.

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Please direct any questions to the undersigned.

Sincerely,

/s/

Gerard J. Waldron  
*Counsel to Ligado Networks LLC*

Attachment

cc: Ms. Rachael Bender

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October 17, 2016

Via Overnight Express and Electronic Mail

Ms. Karen Van Dyke  
Director, Office of Positioning, Navigation  
and Timing and Spectrum Management  
Office of the Assistant Secretary  
for Research and Technology  
Department of Transportation  
3rd Floor, E31-302  
1200 New Jersey Avenue, SE  
Washington, 20590-9898

**Re: DOT's Adjacent Band Study Test Plan**

Dear Ms. Van Dyke:

During the Department's October 14, 2016 Workshop reporting on results from your Office's Adjacent Bands Compatibility Study, the final presentation by your colleague focused on "Next Steps." Specifically, the presentation stated that the next step for the Department involves "refining the inverse modeling frame work to *determine tolerable EIRP levels*." Thus, it appears that your Department plans to not just develop a bounding mask for GPS devices, but to go further and transform that mask into "tolerable EIRP levels" — for radio transmitting devices that are licensed and regulated by the FCC. We wish to point out that the Department lacks authority to determine the EIRP levels when Congress specifically vested that responsibility with the Federal Communications Commission ("FCC").

At the Workshop, I noted that your Department has always said that it does not have the authority to set a standard. Then I asked you if the Department now intended to set a transmission standard. You said no. But in fact your actions and stated intentions seem to be tantamount to a standard-setting process.

This effort to write an EIRP standard is all the more remarkable because the FCC has specific rules in place addressing this very parameter. To illustrate, Section 25.253 of the Commission's Rules, which applies to Ligado's spectrum, provides as follows:

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(d) Applicants for an ancillary terrestrial component in these bands must demonstrate that ATC base stations shall not:

(1) Exceed a peak EIRP of  $31.9 - 10 \cdot \log(\text{number of carriers})$  dBW/200kHz, per sector, for each carrier in the 1525-1541.5 MHz and 1547.5-1559 MHz frequency bands;

(2) Exceed an EIRP in any direction toward the physical horizon (not to include man-made structures) of  $26.9 - 10 \cdot \log(\text{number of carriers})$  dBW/200 kHz, per sector, for each carrier in the 1525-1541.5 MHz and 1547.5-1559 MHz frequency bands;

(3) Exceed a peak EIRP of  $23.9 - 10 \cdot \log(\text{number of carriers})$  dBW/200 kHz, per sector, for each carrier in the 1541.5-1547.5 MHz frequency band;

(4) Exceed an EIRP toward the physical horizon (not to include man-made structures) of  $18.9 - 10 \cdot \log(\text{number of carriers})$  dBW/200 kHz, per sector, for each carrier in the 1541.5-1547.5 MHz frequency band . . . .<sup>1</sup>

Thus, it is clear that the FCC is exercising its authority to *determine tolerable EIRP levels* and that your Office's attempt to do so is *ultra vires*.

It has been well settled for decades that the FCC, in consultation with the Department of Commerce's NTIA, holds exclusive authority to determine how radio transmitting devices can operate. In enacting the Communications Act of 1934, Congress granted exclusive authority to the FCC to regulate the standards for and commercial use of spectrum.<sup>2</sup> Among its other responsibilities, the FCC is empowered to "[p]rescribe the nature of the service to be rendered by each class of licensed station," "[a]ssign bands of frequencies to the various classes of stations," "[r]egulate the kind of apparatus to be used with respect to its external effects and *the purity and*

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<sup>1</sup> 47 C.F.R. § 25.253(d).

<sup>2</sup> 47 U.S.C. § 151 (creating the FCC for the purpose of regulating interstate and foreign commerce by wire and radio); *id.* § 301 (stating the Act's purpose of maintaining Federal Government control of the radio spectrum and requiring that no person transmit radio signals except pursuant to a license granted under the Act); *id.* § 302 (empowering the Commission to regulate the interference potential of radio transmitters); *id.* § 303 (empowering the Commission to adopt such regulations as it deems necessary to prevent interference between radio stations and to encourage more effective use of radio spectrum in the public interest). In subsequent legislation, Congress gave powers to the National Telecommunications and Information Administration ("NTIA") to coordinate Federal government uses of radio spectrum.

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*sharpness of the emissions from each station and from the apparatus therein,”* and regulate as necessary “to prevent interference between stations.”<sup>3</sup>

The jurisdiction of the FCC over technical matters associated with the transmission of radio signals “is clearly exclusive.” *Head v. New Mexico Bd. of Examiners in Optometry*, 374 U.S. 424, 430 n.6 (1963). *See also New York SMSA Ltd. P’ship v. Town of Clarkstown*, 612 F.3d 97, 100 (2d Cir. 2010) (Congress “intended the FCC to possess exclusive authority over technical matters related to radio broadcasting”); *Broyde v. Gotham Tower, Inc.*, 13 F.3d 994, 997 (6th Cir. 1994) (discussing “the FCC’s exercise of exclusive jurisdiction over the regulation of radio frequency interference”). Indeed, federal agencies must respect the bounds of their organic statutes. “Regardless of how serious the problem an administrative agency seeks to address, . . . it may not exercise its authority ‘in a manner that is inconsistent with the administrative structure that Congress enacted into law.’” *FDA v. Brown & Williamson Tobacco Corp.* 529 U.S. 120, 125 (2000) (quoting *ETSI Pipeline Project v. Missouri*, 484 U.S. 496, 517 (1988)).

This broad and exclusive grant of jurisdiction means the FCC has sole authority to regulate in any and all ways the use of spectrum, and that necessarily includes authority to “determine tolerable EIRP levels.” Indeed, the primary reason for the first Federal regulation of radio spectrum in 1912 in the wake of the *Titanic* sinking was to authorize one agency, and only one agency, of government to regulate all interference issues.<sup>4</sup> This century-old mandate dictates that no other agency can seek to freelance and develop “tolerable EIRP levels” on radio transmitting devices subject to the jurisdiction of the FCC. We therefore respectfully submit that Congress has not given the Department authority to undertake the process outlined in your “next steps” at the October 14 Workshop.

Sincerely,



Gerard J. Waldron  
*Counsel to Ligado Networks Inc.*

cc: Hon. Gregory D. Winfree, Assistant Secretary for Research and Technology  
Mr. Christopher Perry, Office of General Counsel

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<sup>3</sup> *Id.* § 303(a)–(c), (e)–(f) (emphasis added).

<sup>4</sup> The Radio Act of 1912 assigned spectrum regulating authority to the U.S. Department of Commerce and Labor. The Radio Act of 1927 moved that authority to a newly created independent agency, the Federal Radio Commission. The Communications Act of 1934 transferred that authority to the Federal Communications Commission.